

Claims

[c1] We claim as our invention:

1. A golf ball comprising:

a solid core composed of a polybutadiene blend and having a diameter in the range of 1.35 inches to 1.64 inches;

an intermediate layer disposed about the core; and

a cover disposed over the intermediate layer,

wherein the golf ball has an innersphere having a surface with a plurality of smooth portions, and a plurality of lattice members encompassing the plurality of smooth portions, each of the lattice members having a cross-

sectional curvature including a first concave portion, a second concave portion, and a convex portion disposed

between the first and second concave portions, each of the plurality of lattice members connected to at least one

other lattice member to form a predetermined pattern of polygons about the plurality of smooth portions, and

wherein the golf ball has a ball Shore D hardness ranging from 45 points to 75 points as measured on the surface

of the golf ball, a coefficient of restitution greater than 0.7964 at 143 feet per second, and an USGA initial ve-

locity less than 255.0 feet per second.

- [c2] 2. The golf ball according to claim 1 wherein each of the lattice members has an apex tangent to the curvature of the convex portion at a distance of from 0.005 inch to 0.010 inch from the bottom of the lattice member, the apices of the lattice members defining an outersphere.
- [c3] 3. The golf ball according to claim 2 wherein the apex of each of the plurality of lattice members has a width less than 0.001 inch.
- [c4] 4. The golf ball according to claim 2 wherein the diameter of the innersphere is at least 1.67 inches.
- [c5] 5. The golf ball according to claim 1 wherein the plurality of lattice members cover between 20% and 80% of the golf ball.
- [c6] 6. The golf ball according to claim 1 wherein each of the plurality of polygons is either a hexagon or a pentagon.
- [c7] 7. The golf ball according to claim 1 wherein the intermediate layer has a Shore D hardness ranging from 50 points to 75 points as measured on the curved surface of the intermediate layer.
- [c8] 8. The golf ball according to claim 1 further comprising a thread layer wound around the intermediate layer.

- [c9] 9. The golf ball according to claim 1 wherein the golf ball has a diameter of 1.68 inches to 1.70 inches.
- [c10] 10. The golf ball according to claim 1 wherein the cover is composed of a material selected from the group consisting of thermosetting polyurethane, thermoplastic polyurethane, ionomer, polyether amide, polybutadiene, and any mixture thereof.
- [c11] 11. The golf ball according to claim 1 wherein the core has a diameter in the range of 1.45 inches to 1.55 inches.
- [c12] 12. The golf ball according to claim 1 wherein the intermediate layer is composed of an ionomer blend of fifty parts of a sodium neutralized high acid methacrylic acid ionomer and fifty parts of a zinc neutralized high acid methacrylic acid.
- [c13] 13. A golf ball comprising:
a solid core composed of a polybutadiene blend and having a PGA compression ranging from 75 points to 120 points;
an intermediate layer disposed about the core, the intermediate layer having a Shore D hardness ranging from 50 points to 75 points as measured on the curved surface of the intermediate layer, the intermediate layer

composed of a thermoplastic material; and a cover disposed over the intermediate layer, the cover composed of a thermosetting polyurethane material, wherein the golf ball has an innersphere having a surface with a plurality of smooth portions, and a plurality of lattice members encompassing the plurality of smooth portions, each of the lattice members having a cross-sectional curvature including a first concave portion, a second concave portion, and a convex portion disposed between the first and second concave portions, each of the plurality of lattice members connected to at least one other lattice member to form a predetermined pattern of polygons about the plurality of smooth portions, and wherein the golf ball has a ball Shore D hardness ranging from 45 points to 75 points as measured on the surface of the golf ball, a coefficient of restitution greater than 0.7964 at 143 feet per second, and an USGA initial velocity less than 255.0 feet per second.

- [c14] 14. The golf ball according to claim 13 wherein each of the lattice members has an apex tangent to the curvature of the convex portion at a distance of from 0.005 inch to 0.010 inch from the bottom of the lattice member, the apices of the lattice members defining an outer-sphere.

- [c15] 15. The golf ball according to claim 14 wherein the apex of each of the plurality of lattice members has a width less than 0.001 inch.
- [c16] 16. The golf ball according to claim 14 wherein the diameter of the innersphere is at least 1.67 inches.
- [c17] 17. The golf ball according to claim 13 wherein the plurality of lattice members cover between 20% and 80% of the golf ball.
- [c18] 18. The golf ball according to claim 13 wherein the golf ball has a coefficient of restitution greater than 0.8115 at 143 feet per second.
- [c19] 19. The golf ball according to claim 13 wherein the golf ball has a coefficient of restitution greater than 0.8150 at 143 feet per second.
- [c20] 20. A golf ball comprising:
a solid core composed of a polybutadiene blend, having a PGA compression ranging from 75 points to 120 points, and having a diameter ranging from 1.35 inches to 1.64 inches, the core having a mass ranging from about 32 grams to about 40 grams;
an intermediate layer disposed about the core and having a Shore D hardness ranging from 50 points to 75 points as measured on the curved surface of the inter-

mediate layer, the intermediate layer composed of an ionomer material; and
a cover disposed over the intermediate layer, the cover composed of a polyurethane material, the cover having a thickness ranging from 0.015 inch to 0.044 inch, wherein the golf ball has an innersphere having a surface with a plurality of smooth portions, and a plurality of lattice members encompassing the plurality of smooth portions, each of the lattice members having a cross-sectional curvature including a first concave portion, a second concave portion, and a convex portion disposed between the first and second concave portions, each of the plurality of lattice members connected to at least one other lattice member to form a predetermined pattern of polygons about the plurality of smooth portions, and wherein the golf ball has a ball Shore D hardness ranging from 50 points to 75 points as measured on the surface of the golf ball, a coefficient of restitution greater than 0.7964 at 143 feet per second, and an USGA initial velocity less than 255.0 feet per second.

- [c21] 21. The golf ball according to claim 20 wherein each of the lattice members has an apex tangent to the curvature of the convex portion at a distance of from 0.005 inch to 0.010 inch from the bottom of the lattice member, the apices of the lattice members defining an outer-

sphere.

- [c22] 22. The golf ball according to claim 20 wherein the cover has a thickness ranging from 0.020 inch to 0.0375 inch.
- [c23] 23. The golf ball according to claim 20 wherein the cover has a thickness of approximately 0.030 inch.
- [c24] 24. The golf ball according to claim 20 wherein the core has a PGA compression ranging from 100 to 110 points.
- [c25] 25. The golf ball according to claim 20 wherein the golf ball has a coefficient of restitution greater than 0.8150 at 143 feet per second.